

REMARKS

In the outstanding Official Action, the Examiner:

(1) indicated that claims 1-10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a non-elected invention, there being no allowable generic or linking claim; and

(2) rejected claims 11-53 under 35 USC 103(a) as being unpatentable over Waddingham et al. in view of Rueckes et al.

In response to Item 1 above, Applicant acknowledges the previous election to prosecute the invention of Group II, claims 11-53, drawn to a method for generating a mask. Applicant expressly reserves the right to prosecute all non-elected subject matter in related applications.

In response to Item 2 above, Applicant has now amended independent claims 11 and 42 to more clearly define the subject matter of the present invention with respect to the prior art of record.

Claim 11 comprises a method for generating a mask having a nanoscale pattern, the method comprising suspending a periodic arrangement of objects in a suspension liquid, supporting the suspension liquid on a top surface of a supporting liquid at a first given height above a top surface of a substrate, and adjusting at least one from a group consisting of (1) the suspension liquid supported on the top surface of the supporting liquid and (2) the top surface of the substrate, to position the top surface of the supporting liquid below the top surface of the substrate so as to deposit the periodic arrangement of objects onto the top surface of the substrate from the suspension on the top surface of the supporting liquid, wherein the periodic

arrangement of objects is maintained over a given area.  
(Underlining added for emphasis.)

Applicant believes that Winningham et al. disclose a method for using intermediate transfer layers for transferring nanoscale patterns to substrates and forming nanostructures on substrates. Applicant believes that the method of Winningham et al. requires that the intermediate transfer layer must be applied in a very thin layer, that the intermediate transfer layer forms a film on the substrate when the solvent is allowed to evaporate if applied in solution, and that the intermediate transfer layer must exhibit a high etch rate. (See column 7, lines 5-40 of Winningham et al.) Applicant believes that Winningham et al. teach away from the present invention as claimed inasmuch as the intermediate transfer layer is a thin film on the substrate in which holes are etched therethrough and material may be deposited into the etched holes. Applicant believes that Winningham et al. do not teach or suggest the step of supporting a suspension liquid on a top surface of a supporting liquid at a height above a top surface of a substrate.

Applicant believes that Rueckes et al. disclose a nanotube fabric formed by depositing a solution of suspended nanotubes on a substrate. Applicant believes that Rueckes et al. do not teach or suggest the step of supporting a suspension liquid on a top surface of a supporting liquid at a height above a top surface of a substrate.

Applicant believes that neither Winningham et al. nor Rueckes et al., either alone or in combination with one another, teach or suggest the steps of suspending a periodic arrangement of objects in a suspension liquid, supporting the suspension liquid on the top surface of a supporting liquid at a first given height above

a top surface of a substrate, and adjusting at least one from a group consisting of (1) the suspension liquid supported on the top surface of the supporting liquid and (2) the top surface of the substrate, to position the top surface of the supporting liquid below the top surface of the substrate. Neither Winningham et al. nor Rueckes et al. are believed to teach or suggest the use of a liquid bath as a supporting liquid for supporting a suspension liquid thereon so as to support objects within the suspension liquid in a periodic arrangement at a height above the top surface of a substrate. Accordingly, claim 11 is believed to be in condition for allowance, and allowance thereof is respectfully requested.

Claims 12-41, which depend either directly or ultimately from independent claim 11, are believed to be in condition for allowance for at least the above-identified reasons.

Accordingly, allowance of claims 12-41 is respectfully requested.

Claim 42 comprises a method for creating a deposition having a nanoscale pattern on a substrate, the method comprising suspending a periodic arrangement of objects in a suspension liquid, supporting the suspension liquid on a top surface of a supporting liquid at a first given height above a top surface of a substrate, adjusting at least one from a group consisting of (1) the suspension liquid supported on the top surface of the fluid and (2) the top surface of the substrate, to position the top surface of the supporting liquid below the top surface of the substrate so as to deposit the periodic arrangement of objects onto the top surface of the substrate from the suspension on the top surface of the fluid, whereby to create a mask, and depositing a material through interstices contained in the mask

so as to create a pattern on the substrate. (Underlining added for emphasis.)

As discussed hereinabove, Applicant believes that neither Waddingham et al. nor Rueckes et al., either alone or in combination with one another, teach or suggest the steps of suspending a periodic arrangement of objects in a suspension liquid, supporting the suspension liquid on a top surface of a supporting liquid at a first given height above a top surface of a substrate, and adjusting at least one from a group consisting of (1) the suspension liquid supported on the top surface of the fluid and (2) the top surface of the substrate, to position the top surface of the supporting liquid below the top surface of the substrate so as to deposit the periodic arrangement of objects onto the top surface of the substrate from the suspension on the top surface of the fluid. Neither Waddingham et al. nor Rueckes et al. are believed to teach or suggest the use of a liquid bath as a supporting liquid for supporting a suspension liquid thereon so as to support objects within the suspension liquid in a periodic arrangement at a height above the top surface of a substrate. Accordingly, claim 42 is believed to be in condition for allowance, and allowance thereof is respectfully requested.

Claims 43-53, which depend either directly or ultimately from independent claim 42, are believed to be in condition for allowance for at least the above-identified reasons. Accordingly, allowance of claims 43-53 is respectfully requested.

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In the event that any additional fees may be required in this matter, please charge the same to Deposit Account No. 16-0221.

Thank you.

Respectfully submitted,

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